

Chapter 15.18

Exhibit A

INTERNATIONAL FIRE

CODE

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15.18.010 International Fire Code Adopted

The current edition of the International Fire Code (IFC), as published by the International Code Council and adopted by the State Building Code Council in Chapter 51-54A WAC, is hereby adopted except as amended by this chapter. The City also adopts Appendix B, Fire-Flow Requirements for Buildings, Appendix C, Fire Hydrant Locations and Distribution, and Appendix D, Fire Apparatus Access Roads of the International Fire Code. The current edition of the International Fire Code is amended by the City to include the following new and amended provisions. All references in this chapter shall be to the current edition of the International Fire Code (hereinafter “IFC”). In the event of any conflict between any provision of the IFC and this chapter, the provisions of this chapter shall apply. New sections or subsections shall be deemed deleted from the IFC and the amended provisions inserted in their place in accordance with the direction of this chapter.

15.18.020 Referenced Codes and Standards

Section 102.7 of the IFC is hereby amended to read as follows:

102.7 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 80. Such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. However, the fire code official may choose to utilize codes and standards in newer editions of the IFC, provided the entire standard is utilized.

102.7.1 Conflicts. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall apply, except as otherwise determined by the fire official as set forth above.

102.7.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard, except as otherwise determined by the fire official as set forth above. Authority of the Fire Chief and the Fire Department.

15.18.030 General Authority and Responsibilities

Section 104.1 of the IFC is hereby amended to read as follows:

If the Fire Department of the City of North Bend ever consolidates its Fire Department with any other fire department, the Fire Chief of the consolidated fire department shall be authorized to administer this code and enforce this code and to adopt policies, procedures, rules, and regulations in order to clarify the application of its provisions. Such interpretations, policies, procedures, rules and regulations shall be in compliance with the

intent and purpose of this code and shall not have the effect of waiving requirements specifically provided for in this code.

The chief hereby delegates to the fire code official all authority under this chapter to enforce all ordinances of the jurisdiction pertaining to:

1. The prevention of fires.
2. The suppression or extinguishment of dangerous or hazardous fires.
3. The storage use and handling of hazardous materials.
4. The installation and maintenance of automatic, manual and other private fire alarm systems and fire-extinguishing equipment.
5. The maintenance and regulation of fire escapes.
6. The maintenance of fire protection and the elimination of fire hazards on land and in buildings, structures and other property, including those under construction.
7. The maintenance of exits.
8. The investigation of the cause, origin and circumstances of fire and unauthorized release of hazardous materials.

Such authority shall become effective immediately upon consolidation and shall terminate immediately upon dissolution of the consolidated fire department. Such authority shall be subject to review and approval by the Mayor of the City of North Bend.

15.18.040 Assistance from Other Agencies

Section 104.10.1 of the IFC is hereby amended to read as follows:

104.10.1. Assistance from other agencies. Police and other enforcement agencies shall have authority to render necessary assistance in the investigation of fires or the enforcement of this code, as requested by the Fire Chief, fire code official or officer of the fire department in charge of the emergency.

15.18.050 Obstructing Operations

Section 104.11.2 of the IFC is hereby amended to read as follows:

No person shall obstruct the operations of the fire department in connection with extinguishment, control, or investigation of any fire, or actions relative to other emergencies, or disobey any lawful command of the fire

code official or officer of the fire department in charge of the emergency, or any part thereof, or any lawful order of a police officer assisting the fire department.

15.18.060 Mobile Food Preparation Vehicles

Section 105.6.30 of the IFC is hereby amended to read as follows:

105.6.30 Mobile food preparation vehicles. A permit is required for mobile food preparation vehicles equipped with appliances that produce smoke or grease-laden vapors or utilize LP-gas systems or CNG systems. Valid operational permits issued by any King County Fire Agency are recognized provided that the vehicle and appliances are maintained in accordance with conditions of the permit.

15.18.070 Positive Alarm Sequence

Section 105.6 of the IFC is hereby amended by the addition of a new subsection 105.6.51 to read as follows:

105.6.51 Positive alarm sequence. An operational permit is required to operate a PAS (Positive Alarm Sequence) Account as prescribed in NFPA (National Fire Protection Association) 72.

15.18.080 Overcrowding

Section 108.6 of the IFC is hereby amended to read as follows:

Overcrowding or admittance of any person beyond the approved capacity of a building or a portion thereof shall not be allowed. The fire code official, upon finding any overcrowding conditions or obstructions in aisles, passageways or other means of egress or upon finding any condition which constitutes a life safety hazard shall be authorized to direct actions to be taken to reduce the overcrowding or to cause the event to be stopped until such condition or obstruction is corrected.

15.18.090 Appeals

Section 109 of the IFC is hereby amended to read as follows:

109.1. Appeals. The City of Issaquah hearing examiner shall hear and make decisions of appeals of orders, decisions or determinations made by the Fire Official relative to the application and interpretations of this code.

109.2. Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The hearing examiner shall have no authority to waive requirements of this code.

15.18.100 General Definitions

Section 202 of the IFC as adopted is hereby amended to include the following additional definitions:

Fire code official means the fire marshal or his or her designee.

A. High-Rise Building. Buildings having occupied floors, or occupied roof, located more than 75 feet (22,860 millimeters) above the lowest level of fire department vehicle access.

B. Power Tap. A listed device for indoor use consisting of an attachment plug on one end of a flexible cord and two or more receptacles on the opposite end equipped with overcurrent protections

C. Public Safety Radio System Operator. Eastside Public Safety Communications Agency (EPSCA), its successor agency – Puget Sound Emergency Radio Network (PSERN) and any future successor agency.

D. Standby Power System. All references to Standby Power System shall be considered to indicate Legally Required Power in accordance with NFPA 70 (National Electrical Code) or other electrical codes adopted by the State of Washington and shall be in accordance with Chapter 27 Legally Required Standby Power, as a source of automatic electric power of a required capacity and duration to operate required building, hazardous

materials or ventilation systems in the event of a failure of the primary power. Standby power systems are required for electrical loads where interruption of the primary power could create hazards or hamper rescue or fire-fighting operations.

E. Water Supply. The source and delivery system supplying the required flow (gpm) and pressure (psi) to a sprinkler system or other fire protection system/equipment.

15.18.110 Vegetation

Section 304.1.2 of the International Fire Code IFC is hereby amended to read as follows:

Weeds, grass, vines or other growth that is capable of being ignited and endangering property, shall be cut down and removed by the owner or occupant on building lots that are either open or contain an occupied or vacant structure.

15.18.120 Open Burning, Recreational Fires and Portable Outdoor Fireplaces

307 IFC Section 307 amended – Open Burning, Recreational Fires and Portable Outdoor Fireplaces. Section 307 of the International Fire Code is hereby amended to read as follows:

307.1 General. A person shall not kindle or maintain or authorize to be kindled or maintained any fire unless conducted in accordance with Sections 307.1.1. through 307.8

307.1.1 Prohibited open burning. Open burning shall be prohibited at all times in compliance with a permanent ban on open burning established by the Puget Sound Clean Air Agency in September of 1992.

Exceptions:

1. Bonfires
2. Recreational Fires
3. Portable outdoor fireplaces

307.2 Permit required. A permit shall be obtained from the fire code official in accordance with Section 105.6 prior to conducting opening burning. Application for such approval shall only be presented by and permit issued to the owner of the land upon which the bonfire is to be conducted.

A permit is not required for a BBQ.

307.3. Bans on fires due to air quality or fire danger. If the Puget Sound Clean Air Agency issues a burn ban due to air quality, or if a fire safety burn ban is issued by the Eastside Fire Marshal or King County Fire

Marshal, all fires are prohibited. It is the responsibility of the property owner where the fire is to be conducted to ensure no such ban exists prior to starting any fire.

307.4 Extinguishment authority. When any fire creates or adds to a hazardous situation, or a required permit has not been obtained, the fire code official is authorized to order the extinguishment of the fire.

307.5 Location. The location for fires shall be as follows:

307.5.1 Bonfires. A bonfire shall not be conducted within 50 feet (15 240 mm) of a structure or combustible material unless the fire is contained in a barbecue pit. Conditions which could cause a fire to spread within 50 feet (15 240 mm) of a structure shall be eliminated prior to ignition.

307.5.2 Recreational fires. Recreational fires shall not be conducted within 25 feet (7620 mm) of a structure or combustible material. Conditions which could cause a fire to spread within 25 feet (7620 mm) of a structure shall be eliminated prior to ignition. [WS] See also Chapter 173-425 WAC

307.5.3 Portable outdoor fireplaces. Portable outdoor fireplaces shall be used in accordance with the manufacturer's instructions and shall not be operated within 15 feet (3048 mm) of a structure or combustible material.

307.6 Attendance. Bonfires, recreational fires and use of portable outdoor fireplaces shall be constantly attended until the fire is extinguished. A minimum of one portable fire extinguisher complying with Section 906 with a minimum 4-A rating or other approved on-site fire-extinguishing equipment, such as dirt, sand, water barrel, garden hose or water truck, shall be available for immediate utilization.

307.7 LPG containers. Portable outdoor barbecues used on occupied roofs of Group R-2 occupancies shall be limited to portable outdoor barbecues designed for use with LPG containers with a capacity of 16.4 ounces (0.465 kg).

307.7.1 Cleaning. Portable outdoor barbecues shall be periodically cleaned by removing grease or fat accumulations from grills and in trays below the grill.

15.18.130 Storage Under Stairways

Section 315.3.2 of the IFC is hereby amended by the addition of a new subsection 315.3.2.1 to read as follows:

315.3.2.1 Storage under stairways. Storage is prohibited under exit stairways.

Exception: Enclosures under stairways in accordance with Sections 1011.7.3 or 1011.7.4 as applicable.

15.18.140 Evacuation Required

Section 401 of the IFC is hereby amended by the addition of a new subsection 401.9 and 409.10 to read as follows:

401.9 Evacuation required. In the event of activation of a fire, emergency alarm, or at the direction the fire code official, occupants of the building or portion of the building in which the alarm is activated shall make a safe

and orderly evacuation out of the building, or as provided in the building's fire safety and evacuation or high-rise emergency operations plan.

Exceptions:

1. Where the occupant's physical or other disability make the occupant unable to evacuate without assistance and no assistance is immediately available; or
2. Where the presence of smoke, fire, structural collapse or other hazard or obstruction in the occupant's means of egress make evacuation unsafe.

401.10 Silence or resetting a commercial fire alarm system. It shall be unlawful for any person to silence or reset a commercial fire alarm system without the approval of the fire code official.

15.18.150 Fire Apparatus Access Roads

Section 503 of the IFC is adopted to read as follows:

A. Fire apparatus public access roads shall be provided and maintained by the city of North Bend in accordance with WAC 51-54A-0503. Private access fire roads shall be provided and maintained by the owner of such roads.

B. The following sections of the IFC as adopted are amended to read as follows:

1. 503.2.1 Dimensions. Fire apparatus access roads, other than those governed above, or on private property, shall have an unobstructed width of not less than 20 feet (6,096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4,115 mm). Emergency Vehicle access roads shall be constructed in accordance with City of North Bend Municipal Code and standards.

2. 503.2.7 Grade. The grade of the fire apparatus access road shall be no more than 12% slope. Access roads may be permitted to exceed 12% with approval of the fire official, where all buildings are provided with an approved fire sprinkler system.

3. 503.3. Markings. When required by the fire code official, approved signs or other approved notices shall be provided and maintained for fire apparatus roads to identify such roads and prohibit the obstruction thereof or both.

a. All designated fire lanes shall be clearly marked by the property owner in the following manner: Vertical curbs shall be painted six (6") inches in height and shall be painted red on the top and side, extending the length of the designated fire lane with four inch (4") white block lettering stenciled on the face "NO PARKING – FIRE LANE." The stenciling shall be spaced every fifty feet (50'). Rolled curbs or surfaces without curbs shall have a six inch (6") wide red stripe painted extending the length of the designated fire lane with four inch (4") white block lettering stenciled on the stripe "NO PARKING – FIRE LANE." The stenciling shall be spaced every fifty feet (50').

b. Signs may be substituted for curb painting when approved in writing by the fire code official ~~marshal~~.

c. Signs shall be not less than eighteen inches (18") in height by twelve inches (12") in width, with block lettering of not less than three inches (3") high brush stroke, reading: "NO PARKING – FIRE LANE." Such signs shall be reflective in nature, with red lettering on a white background, include directional arrows, and spaced at intervals of not less than hundred feet (100') apart or fraction thereof and shall be approved by the fire code official. Signs shall be installed parallel to the street. The top of such signs shall not be less than four feet (4') or more than six feet (6') from the ground. Signs may be placed on buildings when approved in writing by the fire marshal. When posts are required, they shall be constructed of either two inch (2") or greater galvanized steel, or four inch by four inch (4" x 4") or greater pressure treated wood.

d. The fire code official may approve deviations from any of the specifications in writing.

e. Existing signs may be allowed to remain until the fire code official determines that a need for replacement exists based on the legibility or other deterioration of the existing signs. Such replacement shall occur within 30 days of receiving written notification of the deficiency.

f. Fire lanes shall be established and maintained as often as required by the fire code official to clearly identify the designated area as a fire lane, at the sole expense of the property owner. The property owner shall have completed the required establishment or maintenance of fire lanes within 30 days of receiving written notification that such is necessary.

g. At the entrance to the property where fire lanes have been designated, signs shall be posted in a clearly conspicuous location, and shall clearly state that vehicles parked in fire lanes may be impounded, and the name, telephone number, and address of the towing firm where the vehicle may be redeemed.

h. The owner, manager, or person in charge of any property upon which any designated fire lane has been established shall be responsible to prevent the parking of vehicles in such fire lanes by informing the appropriate towing company of the violation. If the lane is blocked by any other obstructions, the owner, manager, or person in charge of the property shall attempt to remove the obstruction, and if unable, shall inform the fire department that the obstruction exists.

i. All criminal violations of the International Fire Code and obstruction of a fire apparatus road may be enforced by any regular or reserve police officer of the Police Department.

j. Except when in compliance with the law or at the direction of a police or fire officer, no person shall stop, stand, or park a vehicle in a red or yellow area designated "Fire Lane."

k. Except when in compliance with the law or at the direction of a police or fire officer, and in accordance with RCW 46.61.570(1), no person shall stop, stand, or park a vehicle within fifteen feet of a fire hydrant.

l. Any person, firm, corporation or organization violating any of the provisions of this title shall be guilty of a civil infraction, punishable as provided in the NBMC. Every day or portion thereof during which any violation of this title occurs or continues shall constitute a separate offense.

15.18.160 Buildings with Enclosed Interior Courtyards

Section 504 of the IFC is hereby amended by the addition of a new subsection 504.4 to read as follows:

504.4. Buildings with enclosed interior courtyards. New buildings with enclosed interior courtyards shall have a straight/direct access corridor and/or stairway from the exterior to the courtyard at a location acceptable to the fire code official. If a stairway is used it shall comply with International Fire Code Section 1011 and a corridor shall comply with International Fire Code Section 1020. The access shall have a minimum width of 4 feet, (or as directed by the fire code official) and be large enough to carry a 35-foot-long sectional ladder (minimum folded length 20 feet) directly from the exterior to the courtyard without obstructions. The access door shall be marked at the street as "Direct access to courtyard".

15.18.170 Premises Identification

Section 505 of the IFC is hereby amended to read as follows:

505.1 Address identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address

identification shall be maintained. Streets and addresses to include floor numbers and unit/suite numbers shall be approved by the fire code official.

505.2 Street or road signs. Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replaced by permanent signs.

15.18.180 Emergency Responder Radio Coverage

The following sections of the IFC International Fire Code as adopted are amended to read as follows:

510.1 Emergency responder radio coverage in new buildings. Approved radio coverage for emergency responders shall be provided within buildings that meet any one of the following conditions:

1. High rise buildings;
2. The total building area is 50,000 square feet or more;
3. The total basement area is 10,000 square feet or more; or
4. There are floors used for human occupancy more than 30 feet below the finished floor of the lowest level of exit discharge.
5. Buildings or structures where the Fire or Police Chief determines that in-building radio coverage is critical because of its unique design, location, use or occupancy.

The radio coverage system shall be installed in accordance with Sections 510.4 through 510.5.5 of this code and with the provisions of NFPA 1221 (2019). This section shall not require improvement of the existing public safety communication systems.

Point of Information

When determining if the minimum signal strength referenced 510.4.1.1 exists at a subject building, the signal strength shall be measured at any point on the exterior of the building up to the highest point on the roof.

Exceptions:

1. Buildings and areas of buildings that have minimum radio coverage signal strength levels of the King County Regional 800 MHz Radio System within the building in accordance with Section 510.4.1 without the use of a radio coverage system.
2. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.
3. One- and two-family dwellings and townhouses.
4. Subject to the approval of the fire code official, buildings other than high-rise buildings, colleges, universities and buildings primarily occupied by Group E or I occupancies that have completed a Mobile Emergency Responder Radio Coverage application and submitted payment as outlined in the application.

510.1.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until Emergency Responder Radio Coverage have been tested and approved in accordance with the provisions of Section 510.

510.2 Emergency responder radio coverage in existing buildings.

Existing buildings shall have approved radio coverage for emergency responders as required in Chapter 11.

510.3 Permit required. A construction permit for the installation of or modification to emergency responder radio coverage systems and related equipment is required as specified in Section 105.7.6. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

Point of Information

Prior coordination and approval from the Public Safety Radio System Operator is required before installation of an Emergency Responder Radio System. Until 2023, such approval is required from EPSCA, King County, Seattle or ValleyCom depending on the location of the installation. It is anticipated in 2023 PSERN will be the single operator of a county wide system.

In order to be forward compatible, designers and contractors should be aware of PSERN's requirements for Distributed Antenna Systems which can be found via <https://psern.org/requirements/>

510.4 Technical requirements. Systems, components and equipment required to provide the emergency responder radio coverage system shall comply with Sections 510.4.1 through 510.4.2.8.

510.4.1 Emergency responder communication enhancement system signal strength. The building shall be considered to have acceptable emergency responder communications enhancement system coverage when signal strength measurements in 95 percent of all areas on each floor of the building meet the signal strength requirements in Sections 510.4.1.1 through 510.4.1.3.

Exception: Critical areas, such as the fire command center(s), the fire pump room(s), interior exit stairways, exit passageways, elevator lobbies, standpipe cabinets, sprinkler sectional valve locations, and other areas required by the fire code official, shall be provided with 99 percent floor area radio coverage.

510.4.1.1 Minimum signal strength into the building. The minimum inbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the fire code official. The inbound signal level shall be a minimum of -95dBm in 95% of the coverage area and 99% in critical areas and sufficient to provide not less than a Delivered Audio Quality (DAQ) of 3.0 or an equivalent Signal-to-Interference-Plus-Noise Ratio (SINR) applicable to the technology for either analog or digital signals.

510.4.1.2 Minimum signal strength out of the building. The minimum outbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the fire code official. The outbound signal level shall be sufficient to provide not less than a DAQ of 3.0 or an equivalent SINR applicable to the technology for either analog or digital signals. A minimum signal strength of -95 dBm

shall be received by the King County Regional 800 MHz Radio System when transmitted from within the building.

510.4.1.3 System performance. Signal strength shall be sufficient to meet the requirements of the applications being utilized by public safety for emergency operations through the coverage area as specified by the Public Safety Radio System Operator in Section 510.4.2.2.

510.4.2 System design. The emergency responder radio coverage system shall be designed in accordance with Sections 510.4.2.1 through 510.4.2.8 and NFPA 1221 (2019).

510.4.2.1 Amplification systems and components. Buildings and structures that cannot support the required level of radio coverage shall be equipped with systems and components to enhance the public safety radio signals and achieve the required level of radio coverage specified in Sections 510.4.1 through

510.4.1.3. Public safety communications enhancement systems utilizing radio-frequency-emitting devices and cabling shall be allowed by the Public Safety Radio System Operator. Prior to installation, all RF-emitting devices shall have the certification of the radio licensing authority and be suitable for public safety use.

510.4.2.2 Technical criteria. The Public Safety Radio System Operator shall provide the various frequencies required, the location of radio sites, the effective radiated power of radio sites, the maximum propagation delay in microseconds, the applications being used and other supporting technical information necessary for system design upon request by the building owner or owner's representative.

510.4.2.3 Power supply sources. Emergency responder radio coverage systems shall be provided with dedicated standby batteries or provided with 2-hour standby batteries and connected to the facility generator power system

in accordance with Section 1203. The standby power supply shall be capable of operating the emergency responder radio coverage system at 100-percent system capacity for a duration of not less than 12 hours.

510.4.2.4 Signal booster requirements. If used, signal boosters shall meet the following requirements:

1. All signal booster components shall be contained in a National Electrical Manufacturer's Association (NEMA) 4, IP66-type waterproof cabinet or equivalent.
Exception: Listed battery systems that are contained in integrated battery cabinets.
2. Battery systems used for the emergency power source shall be contained in a NEMA 3R or higher-rated cabinet, IP65-type waterproof cabinet or equivalent.
3. Equipment shall have FCC or other radio licensing authority certification and be suitable for public safety use prior to installation.
4. Where a donor antenna exists, isolation shall be maintained between the donor antenna and all inside antennas to not less than 20dB greater than the system gain under all operating conditions.
5. Bi-Directional Amplifiers (BDAs) used in emergency responder radio coverage systems shall be fitted with anti-oscillation circuitry and per-channel AGC.
6. The installation of amplification systems or systems that operate on or provide the means to cause interference on any emergency responder radio coverage networks shall be coordinated and approved by the Public Safety Radio System Operator.
7. Unless otherwise approved by the Public Safety Radio System Operator, only channelized signal boosters shall be permitted.

Exception: Broadband BDA's may be utilized when specifically authorized in writing by the Public Safety Radio System Operator.

Point of Information BDA's must also comply with PSERN's (www.psern.org/requirements) detailed requirements, which include channelized, minimum of 28 channels, supporting analog, P25 Phase I (FDMA), and P25 Phase II (TDMA).

510.4.2.5 System monitoring. The emergency responder radio enhancement system shall include automatic supervisory and trouble signals that are monitored by a supervisory service and are annunciated by the fire alarm system in accordance with NFPA 72. The following conditions shall be separately annunciated by the fire alarm system, or, if the status of each of the following conditions is individually displayed on a dedicated panel

on the radio enhancement system, a single automatic supervisory signal may be annunciated on the fire alarm system indicating deficiencies of the radio enhancement system:

1. Loss of normal AC power supply.
2. System battery charger(s) failure.
3. Malfunction of the donor antenna(s).
4. Failure of active RF-emitting device(s).
5. Low-battery capacity at 70-percent reduction of operating capacity.
6. Active system component malfunction.
7. Malfunction of the communications link between the fire alarm system and the emergency responder radio enhancement system.

510.4.2.6 Additional frequencies and change of frequencies. The emergency responder radio coverage system shall be capable of modification or expansion in the event frequency changes are required by the FCC or other radio licensing authority, or additional frequencies are made available by the FCC or other radio licensing authority.

510.4.2.7 Design documents. The fire code official shall have the authority to require “as-built” design documents and specifications for emergency responder communications coverage systems. The documents shall be in a format acceptable to the fire code official.

510.4.2.8 Radio communication antenna density. Systems shall be engineered to minimize the near-far effect. Radio enhancement system designs shall include sufficient antenna density to address reduced gain conditions.

Exceptions:

1. Class A narrow band signal booster devices with independent AGC/ALC circuits per channel.
2. Systems where all portable devices within the same band use active power control

510.5 Installation requirements. The installation of the public safety radio coverage system shall be in accordance with NFPA 1221 (2019) and Sections 510.5.1 through 510.5.7.

510.5.1 Approval prior to installation. Amplification systems capable of operating on frequencies licensed to any public safety agency by the FCC or other radio licensing authority shall not be installed without prior coordination and approval of the Public Safety Radio System Operator.

510.5.2 Minimum qualifications of personnel. The minimum qualifications of the system designer and lead installation personnel shall include both of the following:

1. A valid FCC-issued general radio operators license.
2. Certification of in-building system training issued by an approved organization or approved school, or a certificate issued by the manufacturer of the equipment being installed.

510.5.3 Acceptance test procedure. Where an emergency responder radio coverage system is required, and upon completion of installation, the building owner shall have the radio system tested to verify that two-way

coverage on each floor of the building is in accordance with Section 510.4.1. The test procedure shall be conducted as follows:

1. Each floor of the building shall be divided into a grid of 20 approximately equal test areas, with a maximum test area size of 6,400 square feet. Where the floor area exceeds 128,000 square feet, the floor shall be divided into as many approximately equal test areas as needed, such that no test area exceeds the maximum square footage allowed for a test area.
2. Coverage testing of signal strength shall be conducted using a calibrated spectrum analyzer for each of the test grids. A diagram of this testing shall be created for each floor where coverage is provided, indicating the testing grid used for the test in Section 510.5.3(1), and including signal strengths and frequencies for each test area. Indicate all critical areas.
3. Functional talk-back testing shall be conducted using two calibrated portable radios of the latest brand and model used by the agency's radio communications system or other equipment approved by the fire code official. Testing shall use Digital Audible Quality (DAQ) metrics, where a passing result is a DAQ of 3 or higher. Communications between handsets shall be tested and recorded in the grid square diagram required by section 510.5.3(2): each grid square on each floor; between each critical area and a radio outside the building; between each critical area and the fire command center or fire alarm control panel; between each landing in each stairwell and the fire command center or fire alarm control panel.
4. Failure of more than 5% of the test areas on any floor shall result in failure of the test. Exception: Critical areas shall be provided with 99 percent floor area coverage.
5. In the event that two of the test areas fail the test, in order to be more statistically accurate, the floor shall be permitted to be divided into 40 equal test areas. Failure of not more than two nonadjacent test areas shall not result in failure of the test. If the system fails the 40-area test, the system shall be altered to meet the 95-percent coverage requirement.
6. A test location approximately in the center of each test area shall be selected for the test, with the radio enabled to verify two-way communications to and from the outside of the building through the public agency's radio communications system. Once the test location has been selected, that location shall represent the entire test area. Failure in the selected test location shall be considered to be a failure of that test area. Additional test locations shall not be permitted.
7. The gain values of all amplifiers shall be measured, and the test measurement results shall be kept on file with the building owner so that the measurements can be verified during annual tests. In the event that the measurement results become lost, the building owner shall be required to rerun the acceptance test to reestablish the gain values.
8. As part of the installation, a spectrum analyzer or other suitable test equipment shall be utilized to ensure spurious oscillations are not being generated by the subject signal booster. This test shall be conducted at the time of installation and at subsequent annual inspections.
9. Systems incorporating Class B signal booster devices or Class B broadband fiber remote devices shall be tested using two portable radios simultaneously conducting subjective voice quality checks. One portable radio shall be positioned not greater than 10 feet (3048 mm) from the indoor antenna. The second portable radio shall be positioned at a distance that represents the farthest distance from any indoor antenna. With both portable radios simultaneously keyed up on different frequencies within the same band, subjective audio testing shall be conducted and comply with DAQ levels as specified in Sections 510.4.1.1 and 510.4.1.2.
10. Documentation maintained on premises. At the conclusion of the testing, and prior to issuance of the building Certificate of Occupancy, the building owner or owner's representative shall place a copy of the

following records in the DAS enclosure or the building engineer's office. The records shall be available to the fire code official and maintained by the building owner for the life of the system:

- a. A certification letter stating that the emergency responder radio coverage system has been installed and tested in accordance with this code, and that the system is complete and fully functional.
- b. The grid square diagram created as part of testing in Sections 510.5.3(2) and 510.5.3(3).
- c. Data sheets and/or manufacturer specifications for the emergency responder radio coverage system equipment; back up battery; and charging system (if utilized).
- d. A diagram showing device locations and wiring schematic,
- e. A copy of the electrical permit.

11. Acceptance test reporting to fire code official. At the conclusion of the testing, and prior to issuance of the building Certificate of Occupancy, the building owner or owner's representative shall submit to the fire code official a report of the acceptance test by way of the department's third-party vendor thecomplianceengine.com.

510.5.4 FCC compliance. The emergency responder radio coverage system installation and components shall comply with all applicable federal regulations including, but not limited to, FCC 47 CFR Part 90.219.

510.5.5 Mounting of the donor antenna (s). To maintain proper alignment with the system designed donor site, donor antennas shall be permanently affixed on the highest possible position on the building or where approved by the fire code official. A clearly visible sign shall be placed near the antenna stating, "movement or repositioning of this antenna is prohibited without approval from the fire code official." The antenna installation shall be in accordance with the applicable requirements in the International Building Code for weather protection of the building envelope.

510.5.6 Wiring. The backbone, antenna distribution, radiating, or any fiber-optic cables shall be rated as plenum cables. The backbone cables shall be connected to the antenna distribution, radiating, or copper cables using hybrid coupler devices of a value determined by the overall design. Backbone cables shall be routed through an enclosure that matches the building's required fire-resistance rating for shafts or interior exit stairways. The connection between the backbone cable and the antenna cables shall be made within an enclosure that matches the building's fire-resistance rating for shafts or interior exit stairways, and passage of the antenna distribution cable in and out of the enclosure shall be protected as a penetration per the International Building Code.

510.5.7 Identification Signs. Emergency responder radio coverage systems shall be identified by an approved sign located on or near the Fire Alarm Control Panel or other approved location stating "This building is

equipped with an Emergency Responder Radio Coverage System. Control Equipment located in room (insert information provided by owner)".

A sign stating "Emergency Responder Radio Coverage System Equipment" shall be placed on or adjacent to the door of the room containing the main system components.

510.6 Maintenance. The emergency responder radio coverage system shall be maintained operational at all times in accordance with Sections 510.6.1 through 510.6.4.

Agent shall have the emergency responder radio coverage system inspected and tested annually or where structural changes occur including additions or remodels that could materially change the original field performance tests. Testing shall consist of the following items (1) through (7):

1. In-building coverage test as required by the fire code official as described in Section 510.5.3 "Acceptance test procedure" or 510.6.1.1 "Alternative in-building coverage test".

Exception: Group R Occupancy annual testing is not required within dwelling units.

2. Signal boosters shall be tested to verify that the gain/output level is the same as it was upon initial installation and acceptance or set to optimize the performance of the system.

3. Backup batteries and power supplies shall be tested under load of a period of 2 hours to verify that they will properly operate during an actual power outage. If within the 2-hour test period the battery exhibits symptoms of failure, the test shall be extended for additional 1-hour periods until the integrity of the battery can be determined.

4. If a fire alarm system is present in the building, a test shall be conducted to verify that the fire alarm system is properly supervising the emergency responder communication system as required in Section 510.4.2.5. The test is performed by simulating alarms to the fire alarm control panel. The certifications in Section 510.5.2 are sufficient for the personnel performing this testing.

5. Other active components shall be checked to verify operation within the manufacturer's specifications.

6. At the conclusion of the testing, a report, which shall verify compliance with Section 510.6.1, shall be submitted to the fire code official by way of the department's third-party vendor thecomplianceengine.com

7. At the conclusion of testing, a record of the inspection and maintenance along with an updated grid diagram of each floor showing tested strengths in each grid square and each critical area shall be added to the documentation maintained on the premises in accordance with Section 510.5.3.

510.6.1.1 Alternative In-building coverage test. When the comprehensive test documentation required by Section

510.5.3 is available, or the most recent full five-year test results are available if the system is older than six years, the in-building coverage test required by the fire code official in Section 510.6.1(1), may be conducted as follows:

1. Functional talk-back testing shall be conducted using two calibrated portable radios of the latest brand and model used by the agency's radio communications system or other equipment approved by the fire code official. Testing shall use Digital Audible Quality (DAQ) metrics, where a passing result is a DAQ of 3 or higher. Communications between handsets in the following locations shall be tested: between the fire

command center or fire alarm control panel and a location outside the building; between the fire alarm control panel and each landing in each stairwell.

2. Coverage testing of signal strength shall be conducted using a calibrated spectrum analyzer for:

- (a) Three grid areas per floor. The three grid areas to be tested on each floor are the three grid areas with poorest performance in the acceptance test or the most recent annual test, whichever is more recent; and
- (b) Each of the critical areas identified in acceptance test documentation required by Section 510.5.3, or as modified by the fire code official, and
- (c) One grid square per serving antenna.

3. The test area boundaries shall not deviate from the areas established at the time of the acceptance test, or as modified by the fire code official. The building shall be considered to have acceptable emergency responder radio coverage when the required signal strength requirements in 510.4.1.1 and 510.4.1.2 are located in 95 percent of all areas on each floor of the building and 99 percent in Critical Areas, and any non-functional serving antenna are repaired to function within normal ranges. If the documentation of the acceptance test or most recent previous annual test results are not available or acceptable to the fire code official, the radio coverage verification testing described in 510.5.3 shall be conducted.

Point of Information

The alternative in-building coverage test provides an alternative testing protocol for the in-building coverage test in subsection (1) of section 510.6.1. There is no change or alternative to annual testing requirements enumerated in subsections (2) – (7) of Section 510.6.1, which must be performed at the time of each annual test.

510.6.2 Additional frequencies. The building owner shall modify or expand the emergency responder radio coverage system at his or her expense in the event frequency changes are required by the FCC or other radio licensing authority, or additional frequencies are made available by the FCC Public Safety Radio System Operator or FCC license holder. Prior approval of a public safety radio coverage system on previous frequencies does not exempt this section.

510.6.3 Nonpublic safety system. Where other nonpublic safety amplification systems installed in buildings reduce the performance or cause interference with the emergency responder communications coverage system, the nonpublic safety amplification system shall be corrected or removed.

510.6.4 Field testing. Agency personnel shall have the right to enter onto the property at any reasonable time to conduct field testing to verify the required level of radio coverage or to disable a system that due to malfunction or poor maintenance has the potential to impact the emergency responder radio system in the region.

15.18.190 Automatic Fire-Extinguishing System

Section 903.1.11 of the IFC is hereby amended with a new Section 903.2.11.8 added to read as follows:

Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in this section.

- A. With the exception of detached single-family residences, all newly constructed buildings with a gross square footage of 5,000 square feet regardless of type or use as well as zero lot line townhouses with an aggregate area of 5,000 square feet or greater must be sprinklered.
- B. Additions or alterations to existing buildings that are greater than 50 percent of the building's assessed valuation and would result in a gross floor area greater than 5,000 square feet must be retrofitted with an

automatic fire sprinkler system. Subject to the fire code official, a phasing of up to five years is permitted. Exception: Detached single-family residences from the provisions of this section.

C. Floor Area, Gross. For the purpose of this section, “gross floor area” shall be defined as the floor area whether above or below grade within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, closets, the thickness of the interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts. For the purposes of this section, fire barriers, firewalls, or fire partitions of any type do not constitute separate buildings.

15.18.200 Installation Requirements

Section 903.3 of the IFC is hereby amended to read as follows:

Installation requirements. Automatic sprinkler systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.9.

903.3.1 IFC Section 903.3.1 amended – Standards.

Section 903.3.1 of the IFC is hereby amended to read as follows:

903.3.1 Standards. Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 and other chapters of this code, as applicable. In addition, sprinkler systems shall be designed with a buffer to account for water system fluctuations to include a low reservoir condition. Such buffer shall be 5% for static pressures less than 50 p.s.i. and 10% for static pressures above 50 p.s.i.

Exception: Buffers are not required for systems designed in accordance with Section 903.3.1.3 (NFPA 13 D).

Permit applicants shall independently verify site specific static pressure:

- Prior to initiating sprinkler system.
- Prior to installing any sprinkler piping, including the underground supply.
- Prior to requesting any cover inspections.

903.3.1.1 IFC Section 903.3.1.1 amended – NFPA 13 Sprinkler Systems and seismic coefficient.

Section 903.3.1.1 of the IFC is hereby amended to read as follows:

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Section 903.3.1.1.1, 903.3.1.1.2 and 903.1.1.3.

903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted

from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard, when approved by the fire code official.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the fire code official.
3. In rooms or areas that are of noncombustible construction with wholly noncombustible contents.
4. Fire service access elevator machine rooms and machinery spaces.
5. Machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008 of the International Building Code.
6. Elevator machine rooms, elevator machinery spaces, control spaces, or hoistways of traction elevators that comply with NFPA 13 (2013) Section 8.15.5.3.

903.3.1.1.2 Bathrooms. In Group R occupancies, sprinklers shall not be required in bathrooms that do not exceed 55 square feet (5 m²) in area and are located within individual dwelling units or sleeping units, provided that walls and ceilings, including the walls and ceilings behind a shower enclosure or tub, are of noncombustible or limited-combustible materials with a 15-minute thermal barrier rating.

903.3.1.1.3 IFC Section 903.3.1.1.3 added – Seismic coefficient.

Section 903.3.1.1 of the IFC is hereby amended by the addition of a new subsection 903.3.1.1.3 to read as follows:

903.3.1.1.3 Seismic Coefficient. The coefficient C_p for seismic bracing design calculations in accordance with NFPA 13 shall either use a value of 0.70 or shall use a value based on site specific USGS data.

903.3.1.2 IFC Section 903.3.1.2 amended – NFPA 13R sprinkler systems.

Section 903.3.1.2 of the IFC as adopted by this chapter is amended to read as follows:

903.3.1.2 NFPA 13 R Sprinkler Systems. Automatic sprinkler systems in Group R occupancies up to and including four stories in height shall be permitted to be installed throughout in accordance with NFPA 13R. Buildings designed in accordance with Washington Administrative Code 51-50-0504, 0510 or Section 510.4 of the International Building Code shall be designed in accordance with NFPA 13 throughout.

903.3.9 IFC Section 903.3.9 added – Fire Sprinkler Zones

Section 903.3.9 IFC is hereby amended by the addition of a new section 903.3.9 – Fire Sprinkler Zones

903.3.9 Zones. When fire walls and/or horizontal exits are provided the sprinkler system shall be zoned to coincide with the fire walls and/or horizontal exits.

Exception: Sprinkler zoning is not required in existing construction, provided that fire alarm initiating devices are provided that would provide the same level of occupant notification that a zoned sprinkler system would.

15.18.210 Alarms

IFC Subsection 903.4.2 is amended as follows:

Alarms. Approved fire alarm system with audible and visible alarm notification appliances, shall be provided for every automatic sprinkler system in accordance with section 907 and throughout areas designated by the fire code official. Sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a

single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm.

Exception: With approval of the Fire Code Official, audible and visible alarm notification appliances may be omitted for approved residential sprinkler systems in 1 or 2 family dwelling units if not otherwise specifically required.

15.18.220 Floor Control Valves

IFC Subsection 903.4.3 is amended as follows:

Floor control valves. Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor. The floor control valves shall be located within interior exit stairway and within 6' of floors or landings unless chains or other approved devices are readily available.

Exception: In buildings without interior exit stairways, the location of the floor control valves shall be determined by the fire code official

15.18.230 Testing and Maintenance

Section 903.5 of the IFC is hereby amended by the addition of a new subsection 903.5.1 to read as follows:

903.5.1 Fire Sprinkler and Standpipe main/express drains. Fire Sprinkler and standpipe main/express drains shall be positioned to drain to the sanitary sewer. Additionally, maintenance or testing discharges from fire pumps shall be treated in order to comply with the National Pollution Discharge Elimination System (NPDES) requirements.

Point of Information

Water drained or otherwise discharged from a fire sprinkler system, standpipe or fire pump in the course of testing and maintenance is considered an "illicit discharge" and must drain to the sanitary sewer or be treated in order to discharge to storm drains, ditches, or water bodies.

15.18.240 Height

Section 905.3.1 of the IFC is hereby amended to read as follows:

905.3.1 Height. Class I standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9,144 mm) above the lowest level of the fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9,144 mm) below the highest level of fire department vehicle access.

Exceptions:

1. In determining the lowest level of fire department vehicle access, it shall not be required to consider:
 - 1.1. Recessed loading docks for four vehicles or less, and
 - 1.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

15.18.250 Location of Class I Standpipe Hose Connections

Section 905.4 of the IFC is hereby amended to read as follows:

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

- a. In every required interior exit stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at an intermediate floor level landing between floors. Where

stairs are required to provide roof access, the standpipe roof connections shall be located adjacent to the stair opening on the roof.

Exception:

A single hose connection shall be permitted to be installed in the open corridor or open breezeway between open stairs that are not greater than 75 feet (22 860 mm) apart.

b. On each side of the wall adjacent to the exit opening of a horizontal exit.

Exceptions:

1. Where floor areas adjacent to a horizontal exit are reachable from an interior exit stairway hose connections by a 30-foot (9,144 mm) hose stream from a nozzle attached to 100 feet (30,480 mm) of hose, a hose connection shall not be required at the horizontal exit.

2. When the Fire code official determines that standpipe connection is not needed.

3. In every exit passageway, at the entrance from the exit passageway to other areas of a building.

Exception: Where floor areas adjacent to an exit passageway are reachable from an interior exit stairway hose connections by a 30-foot (9,144 mm) hose stream from a nozzle attached to 100 feet (30,480 mm) of hose, a hose connection shall not be required at the entrance from the exit passageway to other areas of the building.

4. In covered and open mall buildings, adjacent to each exterior public entrance to the mall, adjacent to each entrance from an exit passageway or exit corridor to the mall, at each intermediate landing within required enclosed stairways, and at other locations as necessary so that the distance to reach all portions of a tenant space does not exceed 200 feet (60,960 mm) from a hose connection.

5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), at least one standpipe shall be provided with a 2 1/2 in. hose connection located on the roof. Additional hose connections shall be provided so that all portions of the roof are within 200 feet of hose travel distance from a standpipe hose connection. The hose connection(s) shall be at least 10 feet (3,048 mm) from the roof edge, skylight, light well or other similar vent. All roof hose connections shall be arranged to be operable without entering the building. Roof connections in high-rise buildings are allowed to be located at the highest landing of a stairway with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes.

6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45,720 mm) of hose travel distance from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60,960 mm) of hose travel distance from a hose connection, additional hose connections shall be provided in interior exit stairway or protected locations that are accessed through protected enclosures. The protected enclosure shall be a corridor constructed as a smoke barrier from the exit enclosure to the standpipe connection.

Exception: Hose connections in parking garages must be located in interior exit stair, protected locations, immediately adjacent to exterior exit doors, loading docks or other areas as approved by the fire code official.

Subject to the approval of the fire code official the travel distance may also be increased to a maximum distance of 240 feet.

Point of Information

Chapter 10 of this code outlines the requirements for stairways to the roof and roof access. This section (905.4), identifies the locations of standpipes and hose connections, but does not dictate the need for additional stairways to the roof or roof access.

15.18.260 Dry Standpipes

IFC Subsection 905.8 is amended as follows:

Dry standpipes. Dry standpipes shall not be installed.

Exception: Where subject to freezing and in accordance with NFPA 14 when approved by the fire code official.

15.18.270 Portable Fire Extinguishers Required

Subsection 906.1 of the International Fire Code as adopted is amended, Exception to read as follows:

Exception: In Group R-2 occupancies, portable fire extinguishers shall only be required to be within common areas and corridors and not within each dwelling unit.

15.18.280 General - Fire Alarm and Detection Systems

Section 907.1 of the IFC is hereby amended to read as follows:

907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components in new and existing building and structures:

1. The requirements of Section 907.2 are applicable to new buildings and structures, new fire alarm systems, and replacement of existing fire alarm control panels being installed in existing structures.
2. When an existing fire alarm control units is replaced in existing structures, the entire fire alarm system shall comply with the requirements of Section 907.2

Fire alarm systems upgrades shall not require upgrades to other building systems, unless necessary to meet the requirements of Section 907.2.

Pursuant to Section 104.8 and subject to the approval of the fire code official, fire alarm system upgrades may be phased in over a time period not to exceed 5 years. Approval of a phased alarm system upgrade must be documented in an executed agreement between the applicant and city of Bellevue and shall contain measurable milestones, insurance requirements, and indemnity provisions.

3. The requirements of Section 907.9 are applicable to existing buildings and structures in addition to the condition described in item 2.
4. For the purpose of this section, fire barriers shall not be considered to create a separate building.
5. Building required by this section to be provided with a fire alarm system shall be provided with a single fire alarm system unless otherwise approved by the fire code official.

Section 907.1.2 of the IFC is hereby amended to read as follows:

907.1.2 Fire alarm shop drawings. Shop drawings for fire alarm systems shall be prepared in accordance with NFPA 72 and submitted for review and approval prior to system installation. In addition, the submittal documents shall include a narrative and input/output matrix that supports the approved exiting plan for the building.

907.5.2.1.1 of the IFC is hereby amended to read as follows:

907.5.2.1.1 Average sound pressure. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater, in every occupiable space within the building, or in the case of a partial alarm system, throughout the space that is being provided with the fire alarm system. The minimum sound pressure levels shall be: 75 dBA in occupancies in Groups R and I-1; 90 dBA in mechanical equipment rooms; and 60 dBA in other occupancies. In occupancies with high sound levels, such as nightclubs, bars, theaters, auditoriums, sanctuaries, etc. an interface shall be provided between the fire alarm system and the noise source to eliminate the noise source upon activation of the fire alarm system.

Exception: Private mode signaling in accordance with NFPA 72 shall be allowed in areas of group I-2 and I-3 occupancies where occupants are not expected to self-evacuate.

907.5.2.2 IFC Section 907.5.2.2 amended – Emergency voice/alarm communication systems.

Section 907.5.2.2 through 907.5.2.2.5 amended, and addition of a new subsection 907.5.2.2.6 of the International Fire Code is hereby amended to read as follows:

907.5.2.2 Emergency voice/alarm communication systems. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404. In high-rise buildings, the system shall operate on a minimum of the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Interior exit stairways.
3. Each floor.
4. Areas of refuge as defined in Chapter 2.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended location and a general occupant notification shall be broadcast over the overhead page.

907.5.2.2.1 Manual override. A manual override for emergency voice communication shall be provided on a selective and all-call basis for all paging zones.

907.5.2.2.2 Live voice messages. The emergency voice/alarm communication system shall also have the capability to broadcast live voice messages by paging zones on a selective and all-call basis.

907.5.2.2.3 Alternate uses. The emergency voice/alarm communication system shall be allowed to be used for other announcements, provided the manual fire alarm use takes precedence over any other use.

907.5.2.2.4 Emergency voice/alarm communication captions. Where stadiums, arenas and grandstands have 15,000 fixed seats or more and provide audible public announcements, the emergency voice/alarm communication system shall provide prerecorded or real-time captions. Prerecorded or live emergency captions shall be from an approved location constantly attended by personnel trained to respond to an emergency.

907.5.2.2.5 Emergency power. Emergency voice/alarm communications systems shall be provided with emergency power in accordance with International Building Code Section 2702 and Table 2702.

907.5.2.2.6 Phased Evacuation. All buildings more than 10 stories above the lowest level of fire department vehicle access shall utilize an approved phased evacuation plan.

Exceptions:

1. When an additional exit stairway meeting the requirements of Sections IBC 1011 and 1023 are provided in addition to the minimum number of exits required by Section IBC 1006.

2. Where the width of each required exit stairway is as specified in Section 1011.2 is increased by not less than 24" of additional width.
3. Where occupant self-evacuation elevators in accordance with IBC Section 3008 have been installed.
4. Where full tenant evacuation can be demonstrated to be accomplished in less than 7 minutes.

Point of Information

These provisions are intended to facilitate the simultaneous building evacuation and firefighter response into the building.

907.5.2.3 IFC Section 907.5.2.3 amended – Visible alarms.

Section 907.5.2.3 of the International Fire Code is hereby amended to read as follows:

907.5.2.3 Visible alarms. Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.3.

Exceptions:

1. Visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is replaced, or a new fire alarm system is installed.
2. Visible alarm notification appliances shall not be required in exits as defined in Chapter 2.
3. Visible alarm notification appliances shall not be required in elevator cars.
4. Visual alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6 Exception 2.

907.6.3.1 IFC Section 907.6.3.1 amended – Annunciator panel.

Section 907.6.3.1 of the IFC is hereby amended to read as follows:

907.6.3.1 Annunciator panel. All fire alarm systems in buildings without a fire command center shall be provided with an annunciator panel (or the main fire alarm control panel) located inside the building at the main addressed building entrance.

Exception: Other approved locations.

907.6. IFC Section 907.6. amended – Zones.

Section 907.6.4 of the IFC is hereby amended to read as follows:

907.6.4 Zones. Each floor shall be zoned separately, and a zone shall not exceed 22,500 square feet (2090 m²). The length of any zone shall not exceed 300 feet (91 440 mm) in any direction. Floors shall be further zoned to coincide with any fire walls and/or horizontal exits.

Exceptions:

1. Automatic sprinkler system zones shall not exceed the area permitted by NFPA 13.
2. Fire alarm zones that coincide with fire walls and/or horizontal exits are not required in existing buildings except:
 - a. When a change of use occurs
 - b. The exiting or evacuation plan is modified and depends on the use of the fire wall or horizontal exit
 - c. When fire alarm panels are replaced

907.6.4.1 IFC Section 907.6.4.1 amended – Graphic annunciator.

Section 907.6.4.1 of the International Fire Code is hereby amended to read as follows:

907.6.4.1 Graphic Annunciator. Graphic annunciators, when provided, shall be mounted to maintain the viewer's directional orientation. The visual zone indication on the annunciator panel shall lock in until the system is reset and shall not be canceled by the operation of an audible-alarm silencing switch. Alarm panels

and annunciators shall not be installed where they would obstruct exiting. The required exit width plus 12 inches shall be provided when the panel is located in a means of egress. Alarm panels shall not be installed in an exit enclosure providing the sole exit from any space.

15.18.290 Monitoring

Section 907.6.6 of the IFC is hereby amended by the addition of a new subsection 907.6.6.3, to read as follows:

907.6.6.3 Monitoring required. When required by the fire code official, all new and existing fire detection systems shall be monitored and shall meet the following requirements 907.6.6 Wired phone lines (POTS) are not permitted for new monitoring.

15.18.300 Smoke Control Systems

Section 909 of the IFC, entitled "Smoke Control Systems," is amended in the specified sections and subsections to read as follows:

909.1 IFC 909.1 amended – Scope and purpose.

Section 909.1 of the IFC is hereby amended to read as follows:

909.1 Scope and purpose. This section applies to mechanical or passive smoke control systems when they are required by other provisions of this code. The purpose of this section is to establish minimum requirements for the design, installation and acceptance testing of smoke control systems that are intended to provide a tenable environment for the evacuation or relocation of occupants. These provisions are not intended for the preservation of contents, or the timely restoration of operations. Smoke control systems regulated by this section serve a different purpose than the smoke- and heat-venting provisions found in Section 910. Mechanical smoke control systems shall not be considered exhaust systems under Chapter 5 of the International Mechanical Code.

909.4.6 IFC Section 909.4.6 amended – Duration of operation.

Section 909.4.6 of the IFC is hereby amended to read as follows:

909.4.6. Duration of operation. All portions of active or passive smoke control systems shall be capable of continued operation after detection of the fire event for a period of not less than the time stipulated in International Building Code Section 2702.

909.10.2 IFC Section 909.10.2 amended – Ducts.

Section 909.10.2 of the IFC is hereby amended to read as follows:

909.10.2 Ducts. Duct materials and joints, including shafts acting as ducts and joints shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 909.10.1. Ducts shall be constructed and supported in accordance with the International Mechanical Code. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire resistance-rated structural elements of the building by substantial, noncombustible supports.

Exception: Flexible connections (for the purpose of vibration isolation) complying with the International Mechanical Code and which are constructed of approved fire-resistance-rated materials.

909.10.3 IFC Section 909.10.3 amended – Equipment, inlets and outlets.

Section 909.10.3 of the IFC is hereby amended to read as follows:

909.10.3 Equipment, inlets and outlets. Equipment shall be located so as not to expose uninvolved portions of the building to additional fire hazard. Outdoor air inlets shall be located so as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard. In addition, supply air shall be taken directly from an outside, uncontaminated source located a minimum distance of 20 feet from any air exhaust system or outlet.

909.11 IFC 909.11 amended – Emergency Power systems.

Section 909.11 of the IFC is hereby amended to read as follows:

909.11 Emergency Power. Smoke control systems, including energy management systems used for smoke control or smoke removal, shall be provided with emergency power in accordance with International Building Code Section 2702.

Exception: In other than high-rise buildings, underground buildings, atriums and covered mall buildings, smoke control systems shall be provided with legally required standby power in accordance with International Building Code Section 2702.

909.12 IFC 909.12 amended – Detection and control systems.
Section 909.12 of the IFC is hereby amended to read as follows:

909.12 Detection and control systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Section 907. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control.

Exception: Shaft pressurization equipment in buildings constructed in accordance with Washington Administrative Code 51-50-0504, 0510 or Section 510.4 of the International Building Code may utilize a fire detection system that is listed as releasing equipment.

909.12.1 Verification. Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override and the presence of power downstream of all disconnects. A preprogrammed weekly test sequence shall report abnormal conditions audibly, visually and by printed report or other approved means. The preprogrammed weekly test shall operate all devices, equipment, and components used for smoke control.

Exception: Where verification of individual components tested through the preprogrammed weekly testing sequence will interfere with, and produce unwanted effects to, normal building operation, such individual components are permitted to be bypassed from the preprogrammed weekly testing, where approved by the fire code official and in accordance with both of the following:

1. Where the operation of components is bypassed from the preprogrammed weekly test, presence of power downstream of all disconnects shall be verified weekly by a listed control unit; and
2. Testing of all components bypassed from the preprogrammed weekly test shall be in accordance with Section 909.20.6.

909.17 IFC Section 909.17 amended – System response time.
Section 909.17 of the IFC is hereby amended to read as follows:

909.17 System response time. Smoke-control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment. For purposes of smoke control, the fire-fighter's smoke control panel response time shall be the same for automatic or manual smoke control action initiated from any other building control point. The total response time, including that necessary for detection, shutdown of operating equipment and smoke control system startup, shall allow for full operational mode to be achieved before the conditions in the space exceed the design smoke condition. Upon receipt of an alarm condition at the fire alarm control panel, fans, dampers and automatic doors shall have achieved their expected operating state and confirmation of proper operation shall be indicated at the smoke control panel within 60 seconds. Documentation shall be provided in the required final report.

909.18.8.3.2 IFC Section 909.18.8.3.2 amended – Certificate of compliance.
Section 909.18.8.3.2 of the IFC is hereby amended to add the following subsection:

909.18.8.3.2 Certificate of compliance. A certificate of compliance shall be provided by the special inspector and responsible registered design professional certifying that the referenced property is in substantial compliance. The certificate shall identify the company, designer, special inspector that performed the testing and shall identify the name, date and address of the property being tested. The following statement must also be included in the certificate: "I have reviewed the report and by personal knowledge and on-site observation certify that the smoke

control system is in substantial compliance with the approved design documents, and to the best of my understanding complies with requirements of the applicable codes as identified in the smoke control report.”

909.21.3 IFC Section 909.21.3 amended – Ducts for system.

Section 909.21.3 of the IFC is hereby amended to read as follows:

909.21.3 Ducts for system. Any duct system that is part of the pressurization system shall be protected with the same fire-resistance rating as required for the elevator shaft enclosure, and equipment, control wiring, power wiring, and ductwork shall comply with one of the methods specified in International Building Code Section 909.20.6.1. Ducts shall be in accordance with Section 909.10.2.

909.21.4.4 IFC Section 909.21.4.4 amended – Fan capacity.

Section 909.21.4.4 of the IFC is hereby amended to read as follows:

909.21.4.4 Fan Capacity. The supply fan shall be either adjustable with a capacity of not less than 1,000 cfm (.4719m³/S) per door, or that specified by a registered design professional to meet the requirements of a designed pressurization system. Fans shall be in accordance with Section 909.10.5

15.18.310 Signs

912.5 IFC Section 912.5 amended – Signs.

Section 912.5 of the IFC is hereby amended to read as follows:

912.5 Signs. A red metal sign with white raised letters at least 1 inch (25 mm) in size shall be mounted on all fire department connections serving automatic sprinklers, standpipes or fire pump connections. Such signs shall read: SPRINKLERS, STANDPIPES, COMBINED, DRY S/PIPES, DRY S/P & SPKRS, BOOST TO_(as specified by the fire code official) PSI, or TEST CONNECTION or a combination thereof as applicable.

If it is not readily apparent which building or portion the fire department connection serves, the sign shall also include the premises address or building identification, and the portion of the building protected.

Exception: A metal sign with letters at least 1 inch (25 mm) in size may match the fire department connection where chrome, brass or other approved decorative finish is utilized.

912.5.1 Markings. The fire department connection stand-alone pipe shall be painted red for greater visibility.

Exception: Fire department connections such as chrome, brass, or other approved decorative finish.

Point of Information:

Systems utilizing Pressure Reducing Valves (PRV's) must note the required boosted pressure at the Fire Department Connection, in order to overcome the PRV setting.

15.18.320 General – Fire Pumps

913.1 IFC Section 913.1 amended – General.

Section 913.1 of the IFC is hereby amended to read as follows:

913.1 General. Where provided, fire pumps shall be installed in accordance with this section and NFPA 20.

913.1.1 Fire Pump Controls. Fire pump controllers supplying standpipes in excess of 130 p.s.i. shall be soft start.

913.2 IFC Section 913.2 amended – Protection against interruption of service.

Section 913.2 of the IFC is hereby amended to read as follows:

913.2 Protection against interruption of service.

The fire pump, driver, and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

913.2.1 Protection of fire pump rooms and access. In high-rise buildings fire pumps shall be located in rooms that are separated from all other areas of the building by 2-hour fire barriers constructed in accordance with Section 707 or 2-hour horizontal assemblies constructed in accordance with Section 711, or both. In other than high-rise

buildings separation shall consist of 1-hour fire barriers constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 711, or both.

Fire pump rooms not directly accessible from the outside shall be accessible through an enclosed passageway from an interior exit stairway or exterior exit. The enclosed passageway shall have a fire-resistance rating not less than the fire-resistance rating of the fire pump room.

Exception: Where a fire pump is installed in a parking garage separated from the rest of the building by fire-rated construction equivalent to the pump room, and the portion of the building containing the fire pump is protected by a sprinkler system that does not rely on the fire pump, the protected access to the pump room shall not be required.

Rooms containing fire pumps shall be free from storage, equipment, and penetrations not essential to the operation of the pump and related components.

Exception: Equipment related to domestic water distribution shall be permitted to be located within the same room as the fire pump equipment.

Point of Information

These provisions originate in NFPA 20 (2019) and are intended to facilitate fire department access to the fire pump room. Ideally fire pump rooms are located on the perimeter of the building affording direct access. Where that is not possible, a protected passageway is required. This passageway is not synonymous with an exit passageway and therefore not subject to the significant limitations of allowable penetrations. Fire pump rooms are not permitted to open directly into an exit passageway or interior exit stairway; rather the fire pump room must open into a vestibule before access to an exit passageway or an interior exit stairway.

15.18.330 Automatic Sprinkler System - Covered and Open Mall Buildings

914.2.1 IFC Section 914.2.1 amended – Automatic sprinkler system – Covered and open mall buildings.

Section 914.2.1 of the IFC is hereby amended to read as follows:

914.2.1 Automatic sprinkler system. Covered and open mall buildings and buildings connected shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1, which shall comply with the following:

1. The automatic sprinkler system shall be complete and operative throughout occupied space in the mall building prior to occupancy of any of the tenant spaces. Unoccupied tenant spaces shall be similarly protected unless provided with approved alternative protection.
2. Sprinkler protection for the mall of a covered mall building shall be independent from that provided for tenant spaces or anchors. Where tenant spaces are supplied by the same system, they shall be independently controlled.
3. Sprinkler protection for the tenant spaces of an open mall building shall be independent from that provided for anchor buildings.
4. Sprinkler protection shall be provided beneath exterior circulation balconies located adjacent to an open mall.
5. Where tenant spaces are supplied by the same system, they shall be independently controlled.

15.18.340 Automatic Sprinkler System - High-Rise Buildings

914.3.1 IFC Section 914.3.1 amended – Automatic sprinkler system – High-rise buildings.

Section 914.3.1 of the IFC is hereby amended to read as follows:

914.3.1 Automatic sprinkler system – High rise building. Buildings and structures shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and a secondary water supply where required by Section 914.3.2.

914.3.1.2 IFC Section 914.3.1.2 amended – Water supply to required fire pumps.

Section 914.3.1.2 of the IFC is hereby amended to read as follows:

914.3.1.2 Water supply to required fire pumps. In buildings that are more than 420 feet in building height, required fire pumps shall be supplied by connections to no fewer than two water mains located in different streets and shall not serve other buildings. Separate supply piping shall be provided between each connection to the water main and the pumps. Each connection and the supply piping between the connection and the pumps shall be sized to supply the flow and pressure required for the pumps to operate.

Exception: When approved by the Fire code official, two connections to the same main shall be permitted provided the main is valved such that an interruption can be isolated so that the water supply will continue without interruption through no fewer than one of the connections.

914.3.1.3 IFC Section 914.3.1.3 added – High-rise building sprinkler system design.

Section 914.3.1 of the IFC is hereby amended by the addition of a new subsection 914.3.1.3 to read as follows:

914.3.1.3 High-rise building sprinkler system design. Combination standpipe/sprinkler risers using 6 in. pipe minimum, shall be used. Shut-off valves and water-flow devices shall be provided on each floor at the sprinkler system connection to each standpipe. Two four-way fire department connections serving the combination system shall be provided on separate streets well separated from each other. At least one of the fire department connections shall be connected to the riser above a riser isolation valve. Dry pipe sprinkler systems serving parking garages may use one separate two-way fire department connection. The dry pipe sprinkler system shall be supplied by the on-site water tank.

15.18.350 Secondary Water Supply

914.3.2 IFC Section 914.3.2 amended – Secondary water source.

Section 914.3.2 of the IFC is hereby amended to read as follows:

914.3.2 Secondary water source. A secondary on-site water source shall be provided for high-rise building as follows:

1. High-rise buildings containing R or B occupancy only shall be provided with a net useable volume of 15,000 gallons.
2. High-rise buildings containing an S-2 occupancy shall be provided with a net useable volume of 40,000 gallons.
3. High-rise buildings containing an M occupancy shall be provided with a net useable volume of 50,000 gallons.
4. Multi high-rise complexes that are less than 420 feet in height may share a common secondary water source by combining the highest demand of number 2 or 3 above, with number 1 above. Only one parking/retail area and 2 high-rise buildings may share a common secondary water source.

An acceptable alternative to items 1 through 4 above, is to prove a calculated net useable volume capable of meeting the hydraulically calculated sprinkler demand, including the total (combined inside and outside) hose stream requirement, as per NFPA 13. The duration of the calculated source shall have a duration of not less than 30 minutes for buildings with light hazard occupancies only and a 60-minute duration for building with ordinary hazard occupancies as defined by NFPA 13.

Exception: Existing building, including those undergoing substantial renovation.

15.18.360 Duration

1008.3.4 IFC Section 1008.3.4 amended – Duration.

IFC 1008.3.4 is hereby amended to read as follows:

1008.3.4 Duration. The emergency power system shall provide power for a duration of not less than 90 minutes, or such time as stipulated by Section 2702 and Table 2702 when applicable for high-rise or underground buildings, and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with International Building Code Section 2702.

15.18.370 System Requirements

1009.8.1 IFC Section 1009.8.1 amended – System requirements.
IFC Section 1009.8.1 is hereby amended to read as follows:

1009.8.1 System requirements. Two-way communication systems shall provide communication between each required location and the fire command center or a central control point location approved by the fire department. Where the central control point is not a constantly attended location, a two-way communication system shall have a timed automatic telephone dial-out capability to a monitoring location. The two-way communication system shall include both audible and visible signals. The two-way communication system shall have a battery backup or an approved alternate source of power that is capable of a duration of operation in accordance with Section 2702 and Table 2702 upon failure of the normal power source.

15.18.380 Thresholds

1010.1.7 IFC Section 1010.1.7 amended – Thresholds.
IFC 1010.1.7 is hereby amended to read as follows:

1010.1.7 Thresholds. Thresholds at doorways shall not exceed 3/4 inch (19.1 mm) in height above the finished floor or landing for sliding doors serving dwelling units or 1/2 inch (12.7 mm) above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch (6.4 mm) at doorways shall be beveled with a slope not greater than one-unit vertical in two units horizontal (50-percent slope).

Exceptions:

Occupancy Group R-2 or R-3, threshold heights for sliding and side-hinged exterior doors shall be permitted to be up to 7 3/4 inches (197 mm) in height if all of the following apply:

- 1.1. The door is not part of the required means of egress.
 - 1.2. The door is not part of an accessible route as required by Chapter 11.
 - 1.3. The door is not part of an Accessible unit, Type A unit or Type B unit.
2. In Type B units, where Exception 5 to Section 1010.1.5 permits a 4-inch (102 mm) elevation change at the door, the threshold height on the exterior side of the door shall not exceed 4 3/4 inches (120 mm) in height above the exterior deck, patio or balcony for sliding doors or 4 1/2 inches (114 mm) above the exterior deck, patio or balcony for other doors.
3. Thresholds at doors serving non-occupiable transformer rooms where emergency containment of oil and sprinkler water is required.

15.18.390 Stairway Construction

1011.7 International Fire Code Section 1011.7 amended – Stairway construction.
Section 1011.7 of the International Fire Code is hereby amended to read as follows:

1011.7 Stairway construction. Stairways shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.

Exception: In buildings with a 3-hour horizontal assembly used to establish two separate buildings in accordance with Section 510, a stairway constructed of combustible materials may extend below the 3-hour horizontal assembly if it is enclosed within a 3-hour fire-resistance rated shaft enclosure in accordance with Section 713, extending from the 3-hour horizontal assembly through the lowest basement level.

15.18.400 Roof Access

1011.12.2 IFC Section 1011.12.2 amended – Roof access.
Section 1011.12.2 of the IFC is hereby amended to read as follows:

1011.12.2 Roof access. Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with Section 1510.2 of the International Building Code.

Exception: In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet in area and having a minimum dimension of 3 feet.

15.18.410 Fire Alarm and Sprinkler Zones

1026 IFC added – Fire Alarm and Sprinkler Zones

Section 1026 of the IFC is hereby amended by the addition of a new section 1026.6 – Fire Alarm and Sprinkler Zones

1026.6 Fire Alarm and Sprinkler Zones. When fire walls and/or horizontal exits are provided the fire alarm and sprinkler systems shall be zoned to coincide with the horizontal exits.

Exception: Sprinkler zoning is not required in existing construction if fire alarm initiating devices provide the same level of occupant notification that a zoned sprinkler system would provide.

15.18.420 Emergency Responder Radio Coverage in Existing Buildings

1103.2 IFC Section 1103.2 amended – Emergency responder radio coverage in existing buildings.

Section 1103.2 of the IFC is hereby amended to read as follows:

1103.2 Emergency responder radio coverage in existing buildings.

Buildings constructed prior to the implementation of this code shall not be required to comply with the emergency responder radio coverage provisions except as follows:

1. Whenever an existing wired communication system cannot be repaired or is being replaced.
2. Buildings identified in Section 510.1 undergoing substantial alteration as determined by the Fire code official.
3. When buildings, classes of buildings or specific occupancies do not have minimum radio coverage signal strength as identified in Section 510.4.1 and the Fire or Police Chief determines that lack of minimum signal strength poses an undue risk to emergency responders that cannot be reasonably mitigated by other means.

15.18.430 Single-and Multiple-Station Smoke Alarms

1103.8 International Fire Code Section 1103.8 amended – Single-and multiple-station smoke alarms.

Section 1103.8 of the IFC is hereby amended to read as follows:

1103.8 Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be installed in existing Group I-1 and R occupancies in accordance with Sections 1103.8.1 through 1103.8.3.

1103.8.1 Where required. Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11 10. Interconnection and power sources shall be in accordance with Sections 1103.8.2 and 1103.8.3.

Exception: Where smoke detectors connected to a fire alarm system have been installed as a substitute for smoke alarms.

15.18.440 Building Information Card

1103.11 International Fire Code Section 1103.11 added – Building information card.

Chapter 11 of the International Fire Code is hereby amended by the addition of a new Section 1103.11 to read as follows: Building Information Cards complying with Public Information Sheet F-72 or as hereafter amended shall be provided in every high-rise building, hospital and R occupancies where multiple buildings are located on a common podium.

Building Information Cards shall be located in each fire command center when provided. If no fire command center exists, the Building Information Cards shall be located in an approved location near the Fire Alarm Control Panel. The Building Information shall include, but is not limited to, the information specified in 1103.11.1 through 1103.11.7.

1103.11.1 General Building Information. General building information that includes: property name, address, the number of floors in the building above and below grade, use and occupancy classification (for mix uses, identify the different types of occupancies on each floor) and the estimated building population during the day, night and weekend;

1103.11.2 Building Emergency Contact Information. Building emergency contact information that includes: a list of the building's emergency contacts including but not limited to building manager, building engineer and their respective work phone number, cell phone number and e-mail address;

1103.11.3 Building Construction Information. Building construction information that includes: the type of building construction including but not limited to floors, walls, columns and roof assembly;

1103.11.4 Exit Stairway Information. Exit access stairway and exit stairway information that includes; number of exit access stairways and exit stairways in building; each exit access stairway and exit stairway designation and floors served; location where each exit access stairway and exit stairway discharges, interior exit stairways that are pressurized; exit stairways provided with emergency lighting; each exit stairway that allow reentry; exit stairways providing roof access; elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve; location of elevator machine rooms, control rooms and control spaces; location of sky lobby; and location of freight elevator banks;

1103.11.5 Building Services and System Information. Building services and system information that includes: location of mechanical rooms, location of building management system, location and capacity of all fuel oil tanks, location of emergency generator and location of natural gas service;

1103.11.6 Fire Protection System Information. Fire protection system information that includes: location of standpipes, location of fire pump room, location of fire department connections, floors protected by automatic sprinklers and location of different types of automatic sprinkler systems installed including but not limited to dry, wet and pre-action;

1103.11.7 Hazardous Material Information. Hazardous material information that includes: location and quantity of hazardous material.

15.18.450 Address Identification

1107 IFC Section 1107 added – Address identification.

Chapter 11 of the IFC is hereby amended by the addition of a new Section 1107 to read as follows:

SECTION 1107

PREMISES IDENTIFICATION

1107.1 Address Identification. Address Identification for existing buildings shall be in accordance with section 505.1 of this code.

15.18.460 General Safety Precautions

Section 5003.9 of the IFC is hereby revised by the amendment of 5003.9 and addition of a new section 5003.9.11 to read as follows:

5003.9 General safety precautions. General precautions for the safe storage, handling or care of hazardous materials shall be in accordance with Sections 5003.9.1 through 5003.9.11

5003.9.11 Manufacturer's limitations. The storage and use of hazardous materials shall not exceed the manufacturer's limitations on shelf life and any other restrictions on use.

15.18.470 Insulated Liquid Carbon Dioxide or Nitrogen System used in Beverage Dispensing Applications

The following sections of the International Fire Code as adopted are hereby amended to read as follows:

Insulated liquid carbon dioxide or nitrogen system used in beverage dispensing applications.

Section 5307.3 of the IFC is hereby amended to read as follows:

5307.3 Insulated liquid carbon dioxide or nitrogen systems used in beverage dispensing applications. Insulated liquid carbon dioxide or nitrogen systems with more than 100 pounds (45.4 kg) of carbon dioxide or nitrogen used in beverage dispensing applications shall comply with Section 5307.3.1.

5307.3.1 Ventilation. Where insulated liquid carbon dioxide or nitrogen storage tanks, cylinders, piping and equipment are located indoors, rooms or areas containing storage tanks, cylinders, piping and equipment, and other areas where a leak of carbon dioxide or nitrogen is expected to accumulate, shall be provided with mechanical ventilation in accordance with Section 5004.3 and designed to maintain the room containing carbon dioxide or nitrogen at a negative pressure in relation to the surrounding area.

Exception: A gas detection system complying with Section 5307.3.2 shall be permitted in lieu of mechanical ventilation.

5307.3.2 Gas detection system. Where ventilation is not provided in accordance with Section 5307.3.1, a gas detection system shall be provided in rooms or indoor areas and in below-grade outdoor locations with insulated carbon dioxide or nitrogen systems. Carbon dioxide or nitrogen sensors shall be provided within 12 inches (305 mm) of the floor in the area where the gas is expected to accumulate or other approved locations.

The system shall be designed as follows:

1. Activates an audible and visible supervisory alarm at a normally attended location upon detection of a carbon dioxide or nitrogen concentration of 5,000 ppm (9000 mg/m³).
2. Activates an audible and visible alarm within the room or immediate area where the system is installed upon detection of a carbon dioxide or nitrogen concentration of 30,000 ppm (54 000 mg/m³).

15.18.480 Explosive Materials Storage and Handling – General

The following sections of the International Fire Code as adopted are hereby amended to read as follows:

5604.1 Explosive Materials Storage and Handling - General. The storage and handling of explosive materials is prohibited within the City of North Bend.

Exceptions:

1. Materials listed and stored in accordance with IFC 5601.1 "Exceptions 1-5, and 7-9."
2. Model rocket motors, as defined by 2018 NFPA 1122, stored in accordance with 2018 NFPA 1122. Quantities of more than one pound shall be stored in accordance with 2018 NFPA 1127.

3. When approved by the fire code official, high power rocket motors as defined by 2018 NFPA 1127 and rocket motor reloading kits, stored in accordance with 2018 NFPA 1127
4. Use at legally established mining operations when in compliance with all Federal, State and City laws and codes.-
5. The fire code official is authorized to allow use of explosives or explosive materials for activities such as demolition.

15.18.490 Manufacturing, Assembly and Testing of Explosives, Explosive Materials, Ammunition, Blasting Agents, and Fireworks – General

The following sections of the International Fire Code as adopted are hereby amended to read as follows:

5605.1 Manufacturing, assembly and testing of explosives, explosive materials, ammunition, blasting agents, and fireworks – General.

The manufacturing of explosives, explosive materials, ammunition, blasting agents, and fireworks is prohibited within the City limits.

15.18.500 Storage and Dispensing of Flammable and Combustible Liquids

The following sections of the International Fire Code as adopted are hereby amended to read as follows:

5706.2 Storage and dispensing of flammable and combustible liquids.

Permanent and temporary storage and dispensing of Class I and II liquids for private use on farms, at construction sites, and at Public Maintenance facilities owned by the City of North Bend or other Public agencies shall be in accordance with Sections 5706.2.1 through 5706.2.8.1

Exception: Storage and use of fuel oil and containers connected with oil-burning equipment regulated by Section 603 and the International Mechanical Code.

15.18.510 On-Demand Mobile Fueling Operations

Section 5707 of the International Fire Code is hereby amended to read as follows:

SECTION 5707 ON-DEMAND MOBILE FUELING OPERATIONS

5707.1 General. On-demand mobile fueling operations that dispense Class I, II and III liquids into the fuel tanks of motor vehicles shall comply with Sections 5707.1 through 5707.6.6.

Exception: Fueling from an approved portable container in cases of an emergency or for personal use.

5707.1.1 Approval required. Mobile fueling operations shall not be conducted without first obtaining a permit and approval from the fire code official. Mobile fueling operations shall occur only at approved locations. The fire code official is authorized to approve individual locations or geographic areas where mobile fueling is allowed.

5707.2 Mobile fueling vehicle. An on-demand mobile fueling vehicle shall be that which is utilized in on-demand fueling operations for the dispensing of Class I, II or III liquids into the fuel tanks of motor vehicles.

5707.2.1 Mobile fueling vehicle classifications. An on-demand mobile fueling vehicle shall be characterized one of the following:

1. Tier 1 Mobile Fueling Vehicle- A tank vehicle that complies with NFPA 385 and that has chassis-mounted tanks where the aggregate capacity does not exceed 1600 gallons (6057 L).
2. Tier 2 Mobile Fueling Vehicle- A vehicle with one or more chassis-mounted tanks or chassis-mounted containers, not to exceed 110 gallons (415 L) capacity and having an aggregate capacity that does not exceed 800 gallons (3028 L) or the weight capacity of the vehicle in accordance with DOTn.

3. Tier 3 Mobile Fueling Vehicle- A vehicle that carries a maximum aggregate capacity of 60 gallons (227 L) of motor fuel in metal safety cans listed in accordance with UL 30 or other approved metal containers, each not to exceed 5 gallons (19 L) in capacity.

5707.2.2 Mobile fueling vehicle requirements. Each mobile fueling vehicle shall comply with all local, state and federal requirements., as well as the following:

1. Mobile fueling vehicles with a chassis-mounted tank in excess of 110 gallons (415 L) shall also comply with the requirements of Section 5706.6 and NFPA 385.
2. The mobile fueling vehicle and its equipment shall be maintained in good repair.
3. Safety cans and approved metal containers shall be secured to the mobile fueling vehicle except when in use.
4. Fueling a motor vehicle from tanks or containers mounted in a trailer connected to a mobile fueling vehicle shall be prohibited.

5707.3 Required documents. Documents developed to comply with Sections 5707.3.1 through 5707.3.3 shall be updated as necessary by the owner of the mobile fueling operation and shall be maintained in compliance with Section 108.3.

5707.3.1 Safety and emergency response plan. Mobile fueling operators shall have an approved written safety and emergency response plan that establishes policies and procedures for fire safety, spill prevention and control, personnel training and compliance with other applicable requirements of this code.

5707.3.2 Training records. Mobile fueling vehicles shall be operated only by designated personnel who are trained on proper fueling procedures and the safety and emergency response plan. Training records of operators shall be maintained.

5707.3.3 Site plan. Where required by the fire code official, a site plan shall be developed for each location or area at which mobile fueling occurs. The site plan shall be in sufficient detail to clearly indicate the following:

1. All buildings, structures;
2. Lot lines or, property lines;
3. Electric car chargers;
4. Solar photovoltaic parking lot canopies;
5. Appurtenances on site and their use or function;
6. All uses adjacent to the lot lines of the site;
7. Fueling locations;
8. Locations of all storm drain openings and adjacent waterways or wetlands;
9. Information regarding slope, natural drainage, curbing, impounding;
10. How a spill will be kept on the site property; and
11. Scale of the site plan.

5707.4 Mobile fueling areas. The mobile fueling vehicle and point of connection of the vehicle being fueled shall not occur on public streets, public ways or inside buildings. Fueling on the roof level of parking structures or other buildings is prohibited.

5707.4.1 Separation. The point of connection of the vehicle being fueled shall not take place within 25 feet (7620 mm) of buildings, lot lines, property lines or combustible storage. Mobile fueling vehicles shall not park within 10 feet (3048 mm) of buildings, lot lines, property lines, or combustible storage.

Exceptions:

1. The fire code official shall be authorized to decrease the separation distance for dispensing from metal safety cans or other approved metal containers in accordance with Section 5707.2.
2. The point of fueling shall not take place within 10 feet (3048 mm) of buildings, lot lines, property lines, or combustible storage when the mobile fueling vehicle has an approved vapor recovery system or is servicing vehicles with on board refueling vapor recovery.

Where dispensing operations occur within 15 feet (4572 mm) of a storm drain, an approved storm drain cover or an approved equivalent method that will prevent any fuel from reaching the drain shall be used.

5707.4.3 Electrical equipment. Mobile fueling shall not occur within 20 feet of electrical equipment located within 18 inches of the ground unless such electrical equipment is rated for Class 1, Division 2 hazardous locations in accordance with the National Electrical Code.

5707.4.2 Sources of ignition. Smoking, open flames and other sources of ignition shall be prohibited within 25 feet (7620 mm) of fuel dispensing activities. Signs prohibiting smoking or open flames within 25 feet (7620 mm) of the vehicle or the point of fueling shall be prominently posted on the mobile fueling vehicle. The engines of vehicles being fueled shall be shut off during fueling.

5707.5 Equipment. Mobile fueling equipment shall comply with Sections 5707.5.1 through 5707.5.((4))5.

5707.5.1 Dispensing hoses and nozzles. Where equipped, the dispensing hose shall not exceed 50 feet (15 240 mm) in length. The dispensing nozzles and hoses shall be of an approved and listed type. Where metal-to-metal contact cannot be made between the nozzle and the fuel fill opening, then a means for bonding the mobile fueling vehicle to the motor vehicle shall be provided and employed during fueling operations.

5707.5.2 Break-away device. A listed break-away device shall be provided at the nozzle.

Exception: Mobile fueling vehicles equipped with an approved brake interlock tied to the nozzle holder that prohibits movement of the mobile fueling vehicle when the nozzle is removed from its holder or tied to the delivery of fuel that prevents activation of the pumping system.

5707.5.3 Shut off valve and fuel limit. Mobile fueling vehicles shall be equipped with a listed shutoff valve assembly and a fuel limit switch set to a maximum of 30 gallons (116 L).

5707.5.4 Fire extinguisher. An approved portable fire extinguisher complying with Section 906 with a minimum rating of 4A:80-B:C shall be provided on the mobile fueling vehicle with signage clearly indicating its location.

5707.5.5 Spill kit. Mobile fueling vehicles shall contain a minimum 5-gallon (19 L) spill kit of an approved type.

5707.6 Operations. Mobile fueling vehicles shall be constantly attended during fueling operations with brakes set and warning lights in operation. Mobile fueling vehicles shall not obstruct emergency vehicle access roads.

5707.6.1 Dispensing hose. Where equipped, mobile fueling vehicles shall be positioned in a manner to preclude traffic from driving over the dispensing hose. The dispensing hose shall be properly placed on an approved reel or in an approved compartment prior to moving the mobile fueling vehicle.

5707.6.2 Drip control. Operators shall place a drip pan or an absorbent pillow under the nozzle and each fuel fill opening prior to and during dispensing operations to catch drips.

5707.6.3 Safety cones. Safety cones or other visual barriers shall be employed as warning devices to highlight the vehicle fueling area.

5707.6.4 Vehicle lights. The mobile fueling vehicle flasher lights shall be in operation while dispensing operations are in progress.

5707.6.5 Nighttime deliveries. Nighttime deliveries shall only be made in areas deemed adequately lighted by the fire code official.

5707.6.6 Spill reporting. Spills shall be reported in accordance with Section 5003.3.1.

15.18.520 Maximum Capacity within Established Limits

The following sections of the International Fire Code as adopted are hereby amended to read as follows:

6104.2 Maximum Capacity. Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested commercial areas, the aggregate capacity of any one installation shall not exceed 2,000 gallons water capacity, except that in particular installations this capacity limit may be altered at the discretion of the fire code official after consideration of special features such as topographical conditions, nature of occupancy and proximity to buildings, capacity of proposed tanks, degree of private fire protection to be provided, and facilities of the local fire department. The storage of liquefied petroleum gas shall conform to the provisions of other city ordinances that may apply.

15.18.530 Reference Standards

Chapter 80 of the International Fire Code amended – NFPA 1221

Reference to NFPA 1221 – 2016: Standard for the Installation, Maintenance and Use of Emergency Services Communication Systems is amended to read as follows:

NFPA 1221 - 2019 : Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems

15.18.540 False Alarms – Penalties

A. For the purpose of determining the time periods imposed by this section, false alarms shall be dated from the day of their occurrence.

B. First Response. Response to a premises at which no other false alarm has occurred within the same 30 day period shall be referred to as a “first response.” No penalty or administrative sanction shall be imposed by any first response.

C. Second and Subsequent Response – Civil Penalty. When two or more false alarms have occurred at any premises in any 30 day period, the owner shall have committed the infraction of a “repetitive false alarm.” The civil penalty for a second and succeeding false alarm shall be \$200.00 per occurrence, in addition to any fees imposed pursuant to NBMC Title 3. Any false alarm which results from a failure to take required corrective action to prevent such recurrence after notice thereof by the fire code official and/or any nonpayment of any false alarm penalty may result in the fire code official providing written notice ordering the disconnection of such alarm until the required corrective action or payment of penalty has been made; provided, however, that no disconnection shall be ordered on any premises required by law to have an alarm system in operation.

D. Notice of Violation – Responsibility for Issuance. The fire code official shall be responsible for the issuance of written notices of infraction to the owner following the second and each succeeding false alarm. The fire code official shall notify the city code enforcement officer and city finance department of the amount of the penalties to be collected. It shall be the responsibility of the finance department to collect such penalties.

15.18.550 Violation – Penalty

Any person, firm, corporation or organization violating any of the provisions of this chapter for which a specific penalty is not otherwise imposed shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than \$1000 or by imprisonment not to exceed 90 days, or both such fine and imprisonment. Every

day or portion thereof during which any violation of this chapter occurs or continues shall constitute a separate offense.